

CLAIMS

What is claimed is:

1. An automation device, for a machine-tool, a production machine or a robot, comprising:
 - at least two components connected via a data link, and
 - at least two sub-components associatable with a component, wherein a data message, which includes data for the components and a plurality of data locations, can be sent between the at least two components, and
 - wherein the number of the data locations within a data message is adjustable and each of the data locations is associatable with one of the sub-components.
2. The automation system of claim 1, wherein the data message is subdivided into channels, with the data of a channel being associated with a sub-component.
3. The automation system of claim 1, wherein the data locations have a standardized content.
4. The automation system of claim 3, wherein the standardized content comprises at least one of an actual value, a setpoint, a control word and a parameter.

5. The automation system of claim 1, wherein a sub-component includes an axis or a transmitter.
6. The automation system of claim 1, wherein one component represents a master within the data link and at least one second component represents a slave within the data link.
7. The automation system of claim 1, wherein the data message has a programmable variable length or a maximum length, or both.
8. The automation system of claim 1, and further comprising a message selection table that includes messages selected from the group consisting of standard messages and user-defined messages.
9. A method for programming a data communication of an automation system, for a machine-tool, a production machine or a robot, the system including at least two components connected via a data link and exchanging a data message that includes data locations and data for a component, comprising:
adjusting the number of the data locations of the data message for those components that have at least two sub-components, and
associating each of the data locations with a respective one of the sub-components in one-to-one correspondence.

10. The method of claim 9, and further including the step of subdividing the data message into channels using object separators, wherein the data message in a channel refers to a sub-component.
11. The method of claim 9, wherein the data location includes a standardized content.
12. The method of claim 11, wherein the standardized content comprises at least one of an actual value, a setpoint, a control word and a parameter.
13. The method of claim 9, wherein a sub-component is programmed to represent an axis, a transmitter, a cam connection, a terminal or another object.
14. The method of claim 9, wherein one component within the data communication is programmed as a master and at least one other component is programmed as a slave.

15. A method for programming a data communication of an automation system, for a machine-tool, a production machine or a robot, the system including at least two components connected via a data link and exchanging a data message that includes data locations and data for a component, comprising the steps of:
 - programming the automation system and the at least two components with an engineering system,
 - associating two sub-components with at least one component, said at least one component or sub-component including a predefined function,
 - automatically composing the data message, and
 - automatically associating a data location with one of the sub-components when the data message is automatically composed.
16. The method of claim 15, and further including the step of subdividing the data message into channels using object separators, wherein the data message in a channel refers to a sub-component.
17. The method of claim 15, wherein the data location includes a standardized content.
18. The method of claim 17, wherein the standardized content comprises at least one of an actual value, a setpoint, a control word and a parameter.

19. The method of claim 15, wherein a sub-component is programmed to represent an axis, a transmitter, a cam connection, a terminal or another object.
20. The method of claim 15, wherein one component within the data communication is programmed as a master and at least one other component is programmed as a slave.
21. An engineering system for programming a data communication in an automation system, the automation system including at least two components connected via a data link and exchanging a data message that includes data locations and data for a component, said programming including the steps of:
adjusting the number of the data locations of the data message for those components that have at least two sub-components, and
associating each of the data locations with a respective one of the sub-components in one-to-one correspondence.

22. An engineering system for programming a data communication in an automation system, the automation system including at least two components connected via a data link and exchanging a data message that includes data locations and data for a component, said programming including the steps of:

associating two sub-components with at least one component, said at least one component or sub-component including a predefined function,
automatically composing the data message, and
automatically associating a data location with one of the sub-components when the data message is automatically composed.